

**HEALTH AND SAFETY PLAN**

**CORKTOWN DEVELOPMENT – AREA 4  
1336 AND 1342-1350 BAGLEY STREET  
DETROIT, WAYNE COUNTY, MICHIGAN**

**Project No. RM042764-004**

**October 24, 2005**

**The Traverse Group  
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**EMERGENCY CONTACT INFORMATION**

<b>EMERGENCY</b>	<b>ORGANIZATION/AGENCY</b>	<b>EMERGENCY NUMBER</b>
Injury	United Community Hospital 2401 20 <sup>th</sup> Street, Detroit	313-964-4422
Ambulance	Dispatched through 9-1-1	<b>EMERGENCY: 9-1-1</b>
Fire	Detroit Fire Department	<b>EMERGENCY: 9-1-1</b>
Police	Detroit Police Department	Non-Emergency: (313) 596-2900 <b>EMERGENCY: 9-1-1</b>
		Non-Emergency: (313) 224-3000

**HOSPITAL INFORMATION**

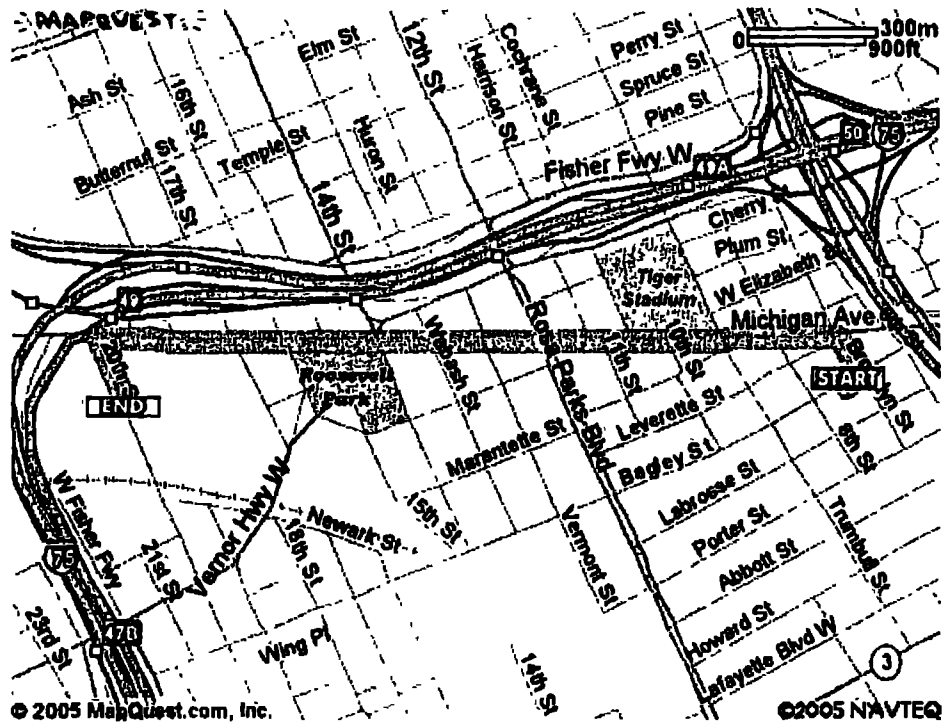
**Location of Local Hospital**

The nearest hospital is the United Community Hospital, located at 2401 20<sup>th</sup> Street, Detroit, Michigan.

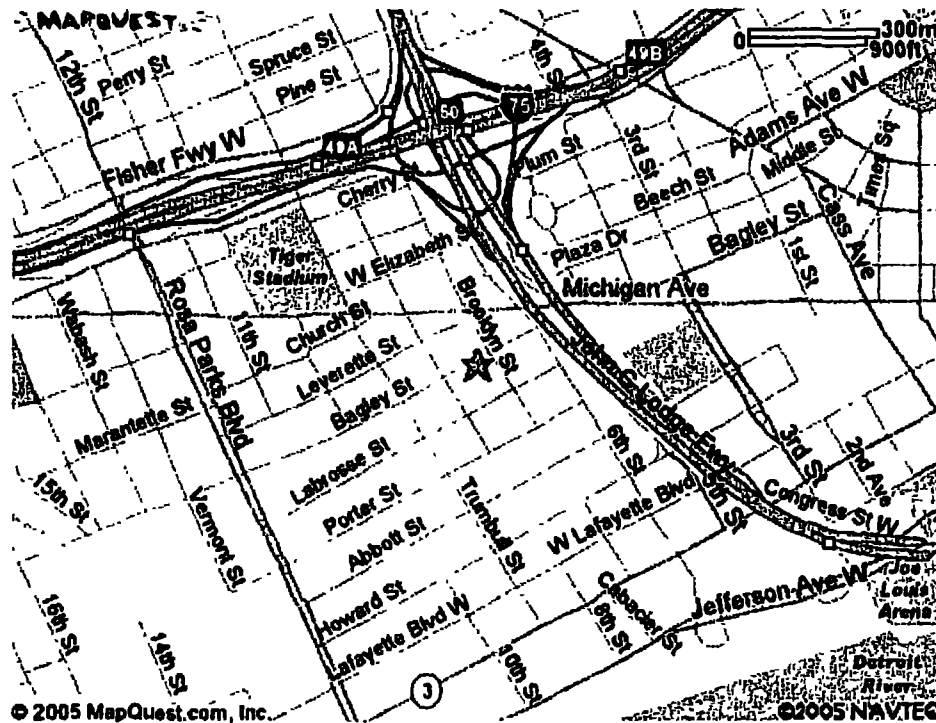
**Directions from Corktown Development – Area 4 Site to United Community Hospital**

Head northeast on Bagley Street, towards Brooklyn Street. Turn left onto Brooklyn Street. Turn left onto Michigan Avenue, proceed for approximately one mile. Turn left onto 20<sup>th</sup> Street; proceed for less than 0.1 mile. End at United Community Hospital.

## Hospital Route Map



## Site Location Map



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**1.0 INTRODUCTION**

The purpose of this site Health and Safety plan is to establish minimum requirements for the protection of The Traverse Group's employees involved in soil and groundwater sampling activities at the Corktown Development – Area 4 site located in Detroit, Wayne County, Michigan.

In this Health and Safety plan, designed specifically for the Corktown Area 4 site, The Traverse Group intends to satisfy the requirements established by the Michigan Department of Public Health Rule 325.52101-52137, Hazardous Waste Operations and Emergency Response and 29 CFR 1910.120. The Traverse Group personnel involved in the project will be familiar with the plan and agree to follow the sections that pertain to their specific job function(s).

**2.0 SITE DESCRIPTION**

The Corktown Development – Area 4 site is located in the vicinity of the intersection of Bagley and 8<sup>th</sup> Streets in Detroit, Michigan. A Site Location Map is included on Page iii. The areas of potential contamination are located throughout the property.

**2.1 Chemical and Physical Hazards**

Health and safety information regarding hazardous chemicals potentially present at the site is summarized in Table 1. Possible physical hazards associated with the investigative activities include subsurface utilities. The Traverse Group will contact Miss Dig to mark subsurface utilities supplied to the subject property prior to any subsurface activities. No heavy equipment will be used within 5 feet of a subsurface utility marker. If drilling or excavating must take place within 5 feet of a subsurface utility, the utility line will be located by hand digging in that area.

**2.2 Affected Area**

See Site Location Map.

### **3.0 ON-SITE ORGANIZATION AND COORDINATION**

Following is a list of personnel from The Traverse Group who are responsible for on-site activities.

#### **The Traverse Group (313) 871-5800**

Project Manager	Michael K. Jordan
Project Technical Leader	David McMahon
Project Team Members	Deanna Pietrzak, Chris Parker
Health and Safety Coordinator	James C. Fox
Site Safety Officer(s)	Deanna Pietrzak, Chris Parker

### **4.0 PERSONNEL TRAINING**

The Traverse Group's on-site personnel have received 40-hours of safety training and appropriate 8-hour refresher training as required by Michigan Department of Public Health Rule 325.52101-52137, Hazardous Waste Operations and Emergency Response and 29 CFR 1910.120.

### **5.0 SITE CONTROL**

On-site personnel from The Traverse Group will only be responsible for site control into the immediate area in which The Traverse Group's personnel are actively working. The Traverse Group will relinquish site control responsibilities when engaging in supervisory or observatory roles of persons other than those employed by The Traverse Group. Prior to start of any site work, The Traverse Group will conduct a health and safety meeting to review The Traverse Group's site control responsibilities with contractors and subcontractors designated representatives. The Traverse Group Site Safety Officer will conduct a brief health and safety "tailgate" meeting to review site control response.

The Traverse Group's employees will not be responsible for equipment and operations of contractors and subcontractors.

The Traverse Group will coordinate access control on the site during construction activities and conduct a Health and Safety meeting prior to the start of work.

The site will be divided into three areas: the exclusion zone, the contamination reduction zone, and the support zone.

### **5.1 Exclusion Zone**

The area surrounding each work location will be referred to as the exclusion zone. Only personnel involved with the specific activity taking place will be allowed to enter the exclusion zone. The radius of the exclusion zone for drilling is defined as either 1.5 times the height of the drill rig mast or those areas where the ambient air concentrations exceed those described in Section 6.0, whichever is greater.

### **5.2 Contamination Reduction Zone**

The contamination reduction zone is defined as the area outside the exclusion zone where decontamination activities will take place. The decontamination station will be placed up-wind of the exclusion zone.

### **5.3 Support Zone**

The support zone is defined as the area surrounding the contamination reduction zone where vehicles and equipment will be stationed.

## **6.0 ENVIRONMENTAL MONITORING**

A photo-ionization detector (PID) will be used to continuously screen the breathing zone of The Traverse Group's employees involved in site activities. If a strong hydrocarbon odor leads to a PID reading of 5 ppm or greater, work should be halted and personnel and equipment should be removed from the area promptly. Workers in the exclusion zone must wear the appropriate protective equipment as outlined in Section 7.1 below. Should activity or environmental monitoring require use of alternative PPE other than that described in Section 7.1; the Safety Coordinator will be contacted and advised of the situation. Activity will cease until the Safety Coordinator makes recommendations as to any new changes with regards to operational



procedures and equipment as well as both use of PPE and decontamination procedures. Any on-site personnel exhibiting signs of chemical exposure will receive medical evaluation. The site health and safety plan will be revised as needed to reflect changes in concentrations of the chemicals detected at the site.

## **7.0 PERSONAL PROTECTIVE EQUIPMENT**

During drilling and system operation and maintenance activities, personnel in the site investigation area will be equipped with Level D protection as defined in the following section.

### **7.1 Exclusion Zone**

Level D protection has been designated for the exclusion zone during boring and soil/groundwater sampling. Specific PPE for Level D protection is listed below:

- Hard Hat
- Safety Glasses
- Hearing Protection (during oversight of drilling or excavation activities)
- Boots, Steel Toe
- (Inner Gloves), Latex; (Outer) Gloves, Polyvinyl Alcohol, Nitrile or other Polychlorinated Biphenyls (PCBs) - resistant equivalent

### **7.2 Contamination Reduction Zone**

Level D protection has been designated for the contamination reduction zone. Specific PPE for Level D protection is in Section 7.1.

Decontamination stations will follow the procedure order listed below:

- Station 1: Equipment decontamination
- Station 2: Outer glove wash and rinse
- Station 4: Outer glove removal
- Station 5: Inner glove wash and rinse
- Station 6: Inner glove removal

Station 7: Wash hands

Disposable safety equipment and spent decontamination solution will be containerized in DOT-approved containers and will be disposed of properly.

### **7.3 Support Zone**

Level D protection has been designated for the support zone. Specific PPE for Level D protection is in Section 7.1.

## **8.0 EMERGENCY PROCEDURES**

In an emergency, on-site personnel will use the following standard emergency procedures. The Traverse Group site safety officer will be notified of any on-site emergencies involving a Traverse Group Employee and must ensure that the appropriate procedures are followed.

**Personal injury of a Traverse Group employee in the exclusion zone will initiate the following actions.**

1. Personnel will assemble in the support zone. If a self-contained breathing apparatus was in use, personnel will assemble at the decontamination line.
2. The site safety officer will evaluate the nature of the injury before moving the victim to the support zone. If the nature of the injury is such that moving the victim will not compound the problem or jeopardize the rescuers, the victim will be moved to the support zone.
3. If required, a rescue team will enter the exclusion zone.
4. An ambulance will be summoned if necessary.

**Personal injury of a Traverse Group employee in the support zone will initiate the following actions.**

1. The site safety officer will assess the situation; and if the injured person's condition does not affect the operation, work will continue.

2. If the injured person's condition increases the risk of injury to others on-site, all personnel will proceed to the decontamination line (if necessary).
3. Site activities will stop until the hazard that caused the injury is reduced to a safe level.
4. An ambulance will be summoned if necessary.

**The following actions will be taken if there is a PPE failure.**

1. The affected person will leave the exclusion zone.
2. Decontamination and medical evaluation will take place.
3. Re-entry will not be permitted until the affected PPE is repaired or replaced.

**When an on-site emergency requires evacuation of the exclusion zone, personnel will not re-enter until the following are met:**

1. The conditions that caused the emergency have been corrected.
2. The hazards have been reassessed.
3. The site safety plan is revised to reflect any changes in the conditions of the site.
4. Site personnel have been briefed on any changes in the site safety plan.

**The undersigned acknowledge that they have reviewed the October 24, 2005 Health and Safety Plan for the Corktown Development – Area 4 site in Detroit, Michigan.**

[illegible]



**TABLE 1**  
**CHEMICAL HAZARD SUMMARY**

**TABLE 1  
CHEMICAL HAZARD SUMMARY**

Chemical	Exposure Limits	Routes of Entry VOCs	Symptoms of Exposure
Acrylonitrile*	2 ppm	Inhalation, absorption, ingestion, skin and/or eye contact	Asphyxia; irritated eyes; headache; sneezing; nausea, vomiting; weakness, light-headedness; skin vesiculation; scaling dermatitis
Benzene*	10 ppm	Inhalation, absorption, ingestion, skin and/or eye contact	Irritation of the eyes, nose and respiratory system; giddiness; headache; nausea; staggered gait; anorexia; lassitude; dermatitis; bone marrow depression
Bromochloromethane	200 ppm	Inhalation, Ingestion, Skin and/or eye contact	Disorientation, dizziness; irritated eyes, throat, skin; pulmonary edema
Bromodichloromethane	NA	NA	NA
Bromoform	0.5 ppm	Inhalation, Absorption, Ingestion	Irritated eyes, respiratory system; central nervous system depression; liver damage
Bromomethane	NA	NA	NA
2-Butanone (MEK)	200 ppm	Inhalation, Ingestion, Skin and/or eye contact	Irritated eyes, nose; headache; dizziness; vomiting
Carbon Disulfide	4 ppm	Inhalation, Absorption, Ingestion, Skin and/or eye contact	Dizziness, headache, poor sleep, fatigue, nervousness, anorexia, weight loss; psychosis; polyneuropathy; Parkinson-like syndrome; ocular changes; coronary heart disease; gastritis; kidney, liver damage; eye, skin burns; dermatitis
Carbon Disulfide	4 ppm	Inhalation, Absorption, Ingestion, Skin and/or eye contact	Dizziness, headache, poor sleep, fatigue, nervousness, anorexia, weight loss; psychosis; polyneuropathy; Parkinson-like syndrome; ocular changes; coronary heart disease; gastritis; kidney, liver damage; eye, skin burns; dermatitis
Carbon Tetrachloride*	2 ppm	Inhalation, Absorption, Ingestion, Skin and/or eye contact	Central nervous system depression; nausea, vomiting; liver, kidney damage; skin irritation
Chlorobenzene	75 ppm	Inhalation, Ingestion, Skin and/or eye contact	Irritated skin, eyes, nose; drowsiness, incoherence; in animals: liver, lung, kidney damage
Chloroethane	NA	NA	NA
Chloroform*	2 ppm	Inhalation, Ingestion, Skin and/or eye contact	Dizziness, mental dullness, nausea, disorientation; headache, fatigue; anesthesia; hepatomegaly; irritated eyes, skin
Chloromethane	NA	NA	NA
Dibromochloromethane	NA	NA	NA
1,2-Dibromo-3-chloropropane*	0.001 ppm	Inhalation, Skin and/or eye contact	Drowsiness; nausea, vomiting; irritated eyes, nose, throat, skin; pulmonary edema
Dibromomethane	NA	NA	NA
1,2-Dibromoethane	NA	NA	NA

Information obtained from the 1990 NIOSH Pocket Guide to Chemical Hazards and the Columbia Online Information Network.

ppm: parts per million

\*: carcinogenic compound

NA: data not available

**TABLE 1  
CHEMICAL HAZARD SUMMARY**

Chemical	Exposure Limits	Routes of Entry	Symptoms of Exposure
1,2-Dichlorobenzene	50 ppm	Inhalation, Absorption, Ingestion, Skin and/or eye contact	Irritated nose, eyes; liver, kidney damage; skin blistering
1,3-Dichlorobenzene	NA	NA	NA
1,4-Dichlorobenzene*	75 ppm	Inhalation, Ingestion, Skin and/or eye contact	Headache; eye irritation, periorbital swelling; profuse rhinitis; anorexia, nausea, vomiting; weight loss
1,4-Dichloro-2-butene (trans)	NA	NA	NA
Dichlorodifluoromethane	1000 ppm	Inhalation, Skin and/or eye contact	Dizziness, tremors, unconsciousness, cardiac arrhythmias, cardiac arrest
1,1-Dichloroethane	100 ppm	Inhalation, Ingestion, Skin and/or eye contact	Central nervous system depression; skin irritation; liver, kidney damage
1,2-Dichloroethane	NA	NA	NA
1,1-Dichloroethene	NA	NA	NA
1,2-Dichloroethene	NA	NA	NA
1,2-Dichloroethene (cis)	NA	NA	NA
1,2-Dichloroethene (trans)	NA	NA	NA
1,2-Dichloropropane	NA	NA	NA
1,2-Dichloropropene (cis)	NA	NA	NA
1,2-Dichloropropene (trans)	NA	NA	NA
Diethyl ether	NA	NA	NA
1,4-Dioxane	100 ppm (TWA)	Inhalation, Skin adsorption, Ingestion, Skin and/or eye contact	Irritation eyes, skin nose, throat; drowsiness, headache; nausea, vomiting; liver damage; kidney failure
Ethylbenzene	100 ppm	Inhalation, Ingestion, Skin and/or eye contact	Irritation of the eyes and mucous membranes; headache; dermatitis; coma; narcosis
Hexachloroethane*	1 ppm	Inhalation, Absorption, Ingestion, Skin and/or eye contact	Irritation of the eyes
2-Hexanone	5 ppm	Inhalation, Absorption, Ingestion, Skin and/or eye contact	Irritated eyes, nose; peripheral neuropathy; weakness, paresthesia; dermatitis; headache; drowsiness
Isopropylbenzene	NA	NA	NA
Methylene Chloride*	500 ppm	Inhalation, Ingestion, Skin and/or eye contact	Fatigue, weakness, sleepiness, light-headedness; limbs numb, tingle; nausea; irritated eyes, skin
Methyl Iodide*	2 ppm	Inhalation, Absorption, Ingestion, Skin and/or eye contact	Nausea, vomiting; vertigo, ataxia; slurred speech, drowsiness; dermatitis; eye irritation
2-Methylnaphthalene	NA	NA	NA
4-Methyl-2-Propanone (MIBK)	NA	NA	NA
Methyl Tertiary Butyl Ether (MTBE)	NA	NA	NA

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ppm. parts per million

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NA: data not available



**TABLE 1  
CHEMICAL HAZARD SUMMARY**

Chemical	Exposure Limits	Routes of Entry	Symptoms of Exposure
Naphthalene	10 ppm	Inhalation, Absorption, Ingestion, Skin and/or eye contact	Eye irritation; headache; confusion, excitement, malaise; nausea, vomiting, abdominal pain; irritated bladder; profuse sweating; jaundice; hematopoietic, hemoglobinuria, renal shutdown; dermatitis
2-Propanone (acetone)	750 ppm	Inhalation, Ingestion, Skin and/or eye contact	Irritated eyes, nose, throat; headache, dizziness; dermatitis
n-Propylbenzene	NA	NA	NA
Styrene	50 ppm	Inhalation, Ingestion, Skin and/or eye contact	Irritated eyes, nose; drowsiness, weak, unsteady gait; narcosis; defatting dermatitis
1,1,1,2-Tetrachloroethane	NA	NA	NA
1,1,2,2-Tetrachloroethane*	1 ppm	Inhalation, Absorption, Ingestion, Skin and/or eye contact	Nausea, vomiting, abdominal pain; finger tremors; jaundice, enlarged tender liver; dermatitis; monocytosis; kidney damage
Tetrachloroethene	100 ppm (TWA)	Inhalation, Skin Absorption, Ingestion, Skin and/or eye contact	Irritation eyes, skin, nose, throat, respiratory system; nausea; flush face, neck; vertigo, dizziness, incoordination; headache, somnolence; skin erythema; liver damage
Toluene	100 ppm	Inhalation, Absorption, Ingestion, Skin and/or eye contact	Fatigue, weakness; confusion, euphoria, dizziness; headache; dilated pupils; lacrimation; nervousness; muscle fatigue; insomnia; paresthesia; dermatitis
1,1,1-Trichloroethane	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA
1,1,2-Trichloroethane*	10 ppm	Inhalation, Absorption, Ingestion, Skin and/or eye contact	Irritated nose, eyes; central nervous system depression; liver, kidney damage
Trichloroethene*	50 ppm	Inhalation, Ingestion, Skin and/or eye contact	Headache, vertigo; visual disturbance, tremors, somnolence, nausea, vomiting; irritated eyes; dermatitis; cardiac arrhythmias, paresthesia
Trichlorofluoromethane	NA	NA	NA
1,2,3-Trichloropropane*	10 ppm	Inhalation, Absorption, Ingestion, Skin and/or eye contact	Irritated eyes, throat; central nervous system depression; liver injury; skin irritation
1,2,4-Trimethylbenzene	NA	NA	NA
1,3,5-Trimethylbenzene	NA	NA	NA
Vinyl acetate	NA	NA	NA
Vinyl chloride*	1 ppm	Inhalation	Weakness; abdominal pain, gastrointestinal bleeding; hepatomegaly; pallor or cyanosis of extremities
Xylenes (o,m & p)	100 ppm	Inhalation, Absorption, Ingestion, Skin and/or eye contact	Dizziness; excitement; drowsiness, incoordination staggering gait; irritation of the eyes, nose and throat; corneal vacuolization; anorexia, nausea, vomiting, abdominal pain; dermatitis

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 ppm. parts per million  
 \*: carcinogenic compound  
 NA: data not available

**TABLE 1**  
**CHEMICAL HAZARD SUMMARY**

Chemical	Exposure Limits	Routes of Entry	Symptoms of Exposure
		<b>Metals<sup>1</sup></b>	
Arsenic	0.010 mg/m <sup>3</sup>	Inhalation, absorption, ingestion, skin and/or eye contact	Ulceration of nasal septum; dermatitis; gastrointestinal disturbances; peripheral neuropathy; respiratory irritation; hyperpigmentation of skin
Barium	0.5 mg/m <sup>3</sup>	Inhalation, ingestion, skin and/or eye contact	Irritation of eyes, skin, upper respiratory system; skin burns; gastroenteritis; muscle spasm; slow pulse; extrasystoles; hypokalemia
Cadmium*	0.2 mg/m <sup>3</sup>	Inhalation, Ingestion	Pulmonary edema, dyspnea, cough, chest tightness, substernal pain; headache; chills, muscle aches; nausea, vomiting, diarrhea; anosmia, emphysema, proteinuria, mild anemia
Chromium	1 mg/m <sup>3</sup>	Inhalation, Ingestion	Histologic fibrosis of the lungs
Copper	1 mg/m <sup>3</sup>	Inhalation, Ingestion, Skin and/or eye contact	Irritation of eyes, nose, pharynx; nasal perforation; metallic taste; dermatitis; in animals: lung, liver, kidney damage; anemia
Lead	0.05 mg/m <sup>3</sup>	Inhalation, Ingestion, Skin and/or eye contact	Weakness, lassitude, insomnia; facial pallor; pal eye, anorexia, weight loss, malnutrition; constipation, abdominal pain, colic; anemia; gingival lead line; tremor; wrist paralysis, ankles; encephalopathy; nephropathy; irritated eyes; hypotension
Mercury*	0.1 mg/m <sup>3</sup>	Inhalation, absorption, ingestion, skin and/or eye contact	Irritation of eyes, skin; cough; chest pain; dyspnea; bronchitis; pneumonitis; tremor; insomnia; irritability; indecision; headache; fatigue; weakness; stomatitis; salivation; gastrointestinal disturbance; anorexia; weight loss; proteinuria
Selenium	0.2 mg/m <sup>3</sup>	Inhalation, ingestion, skin and/or eye contact	Irritation of eyes, skin, nose, throat; visual disturbance; headache; chills, fever; dyspnea, bronchitis; metallic taste, garlic breath, gastrointestinal disturbance; dermatitis; eye, skin burns; in animals: anemia; liver necrosis, cirrhosis; kidney, spleen damage
Silver	0.01 mg/m <sup>3</sup>	Inhalation, ingestion, skin and/or eye contact	Blue-gray eyes; nasal septum, throat, skin irritation, skin ulceration; gastrointestinal disturbance
Zinc*	5 mg/m <sup>3</sup>	Inhalation	Metal fume fever: chills, muscle ache, nausea, fever, dry throat, cough, weakness, lassitude; metallic taste; headache; blurred vision; low back pain; vomiting; fatigue; malaise; tight chest, dyspnea, rales, decreased pulmonary function

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**TABLE 1**  
**CHEMICAL HAZARD SUMMARY**

Chemical	Exposure Limits	Routes of Entry	Symptoms of Exposure
<b>Polynuclear Aromatics (PNAs)</b>			
Acenaphthene	NA	Inhalation, Absorption and Ingestion	Tightness and pain in chest; coughing; difficulty breathing; skin and eye irritation
Anthracene	NA	Inhalation, Absorption and Ingestion	Irritation to eyes, nose, throat, and lungs
Benzo (a) anthracene	NA	NA	NA
Benzo (b) fluoranthene	NA	NA	NA
Benzo (k) fluoranthene	NA	NA	NA
Benzo (a) pyrene	NA	NA	NA
Benzo (g,h,i) perylene	NA	NA	NA
Chrysene	NA	NA	NA
Dibenzo (a,h) anthracene	NA	NA	NA
Fluoranthene	NA	NA	NA
Fluorene	NA	NA	NA
Ideno (1,2,3-cd) pyrene	NA	NA	NA
Naphthalene	10 ppm	Inhalation, Absorption, Ingestion, Skin and/or eye contact	Eye irritation; headache; confusion, excitement, malaise; nausea, vomiting, abdominal pain; irritated bladder; profuse sweating; jaundice; hematopoietic, hemoglobinuria, renal shutdown; dermatitis
Phenanthrene	NA	NA	NA
Pyrene	NA	NA	NA
<b>Polychlorinated Biphenyls</b>			
Arochlor 1016	NA	NA	NA
Arochlor 1242*	1 mg/m <sup>3</sup> (skin)	Inhalation, ingestion absorption, skin and/or eye contact	eye irritation; chloracne; liver damage
Arochlor 1248	NA	NA	NA
Arochlor 1254*	0.5 mg/m <sup>3</sup> (skin)	Inhalation, ingestion absorption, skin and/or eye contact	eye and skin irritation; acne-form dermatitis; carcinogen; in animals: liver damage
Arochlor 1260	NA	NA	NA
Arochlor 1268	NA	NA	NA

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